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Testimony
Before the Committee on Resources
United States House of Representatives

Hearing on the Status of the Eastern Oyster (*Crassostrea virginica*)
and the Petition to List the Eastern Oyster as Endangered
or Threatened under the Endangered Species Act

July 19, 2005

First of all I want to thank you for the opportunity to comment on this petition. As president of the East Coast Shellfish Growers Association I represent thousands of small farmers from Maine to Florida. For the past 20 years I have run my own small oyster farm in Rhode Island. I have a degree in Oceanography and my thesis was on the feeding and growth of oysters. Most of my life revolves around oysters.

I would like to point out what I believe are certain flaws in the petition to list the oyster as endangered.

First, the petitioner makes selective use of the data to paint a picture that appears dire, but conceals the fact that oysters are in fact thriving in many areas. We recently estimated that there are currently somewhere in excess of five billion oysters in US waters based solely on what goes to market each year.

Second, the petitioner attributes much of the decline in oysters to degraded water quality and excessive silt and nutrient loading. In fact the oyster is well adapted to rich turbid waters and thrives in many of our most polluted coastal estuaries.

The third point I would like to make is that the listing of the oyster will have serious negative environmental impact by virtue of the fact that it will curtail or eliminate much of the private commercial aquaculture of oysters. Oyster culture has been shown to benefit water quality, provide habitat for juvenile fish and provide a sustainable source of free swimming larvae into the watershed.

The petitioner has submitted an eloquent and convincing case describing the decline of the oyster on the east coast. He neglects to include the data from the Gulf Coast region, which maintains a stable and sizeable harvest of oysters. Clearly this is the same species. Had he included this data the decline would not appear as drastic as his data appear to suggest.

Moreover the data set is deceptive because the Chesapeake - Delaware region was historically such a huge percentage of the Atlantic coastal production that it appears as if the entire population has suffered when in fact the population declines are largely centered in the mid-Atlantic states, while most New England and Gulf coast populations are (with tremendous year to year variation) relatively stable over the long term.

Furthermore, harvest statistics do not accurately track abundance. Most states have substantial populations of oysters behind pollution closure lines that serve as spawner sanctuaries and yet never reach the market.

The mid-Atlantic states have been hit hard with the triple threat of two parasitic diseases, a degraded habitat and a mismanaged wild harvest. Outside the mid-Atlantic region other

states wrestle with each of these three threats to various degrees, but oyster populations are relatively healthy and oyster aquaculture is in many cases expanding.

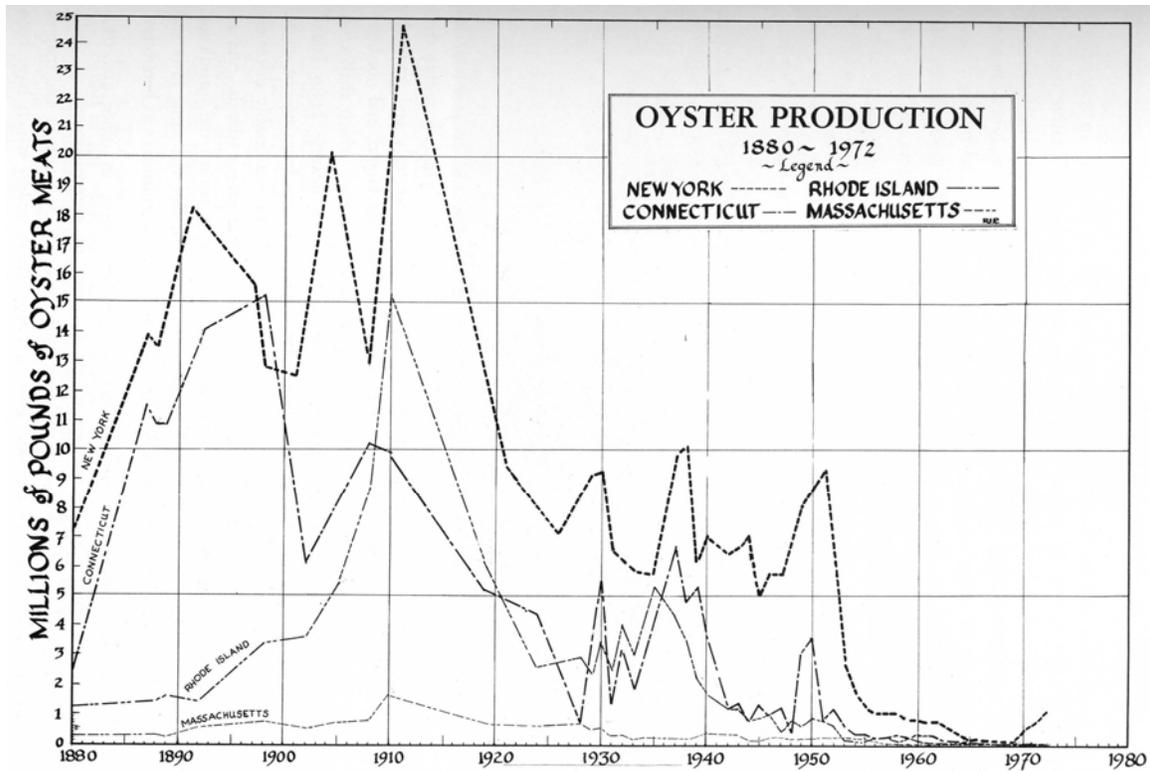
To put the issue in perspective it helps to review a little of the history of oystering.

For the past hundred and fifty years oyster management has been a delicate balance of regulating a wild fishery and augmenting wild populations with certain forms of public aquaculture enhancement. Around 1830 it was discovered that sets could be enhanced by placing clean shell in key setting beds, and then relaying the seed oyster to growing grounds. This simple aquaculture tool coupled with advances in harvesting efficiency brought the Maryland harvest from roughly 2 million bushels to nearly 15 million bushels by 1880. Overzealous harvesters pounded the beds and over the next 20 years those harvests had declined to 3 million bushels.

Dr. William Brooks wrote in *The Oyster* in 1891 “We have wasted our inheritance by improvidence and mismanagement... ..our oyster policy is destructive and sure to result, ultimately in ruin to the industry. ...the oyster property of the state is in imminent danger of complete destruction unless radical changes in the methods of managing the beds are made at once.”

It is important to note that his predictions predated the discovery of significant oyster disease and the bulk of the dredging and habitat destruction that has occurred in the past 100 years. Unfortunately the work of Dr. Brooks was ignored and his predictions proved accurate.

To the north natural populations were also quickly being depleted by overzealous harvesters. Many states allowed private individuals to lease bottom for commercial aquaculture. In Rhode Island, Connecticut and Long Island turn-of-the century entrepreneurs developed oyster farms that produced several millions of dollars (in today's value) worth of oysters each year. Hundreds of thousands of barrels of oysters were shipped to England and by train to the west coast.



Oyster Production. Drawing by Robert J. Pawlik.

After the turn of the century the New England industry went into decline. By 1950 the private farms had ceased to produce. The forces that conspired to eliminate oyster farming were not biological, but rather they were economic. First the invention of the flush toilet in 1900 (before the development of sewage treatment plants) resulted in several cholera epidemics which subdued the market for oysters. The cheap labor pool went off to fight in world War II and oysters were not affordable for depression era families.

New England's Oyster Farming Revival

Connecticut has fostered a resurgence of the oyster industry. With techniques little changed from a hundred years ago, the industry was revived with a large dose of faith and public and private investment. In 1972 a million dollars worth of shell was dumped on the setting grounds and the industry bounced back. Prior to this the annual harvest was about 30,000 bushels. Within ten years the harvest was back up to nearly a million bushels a year. A \$60-million-a-year oyster industry with 650 jobs was reborn.

Connecticut's oyster industry has subsequently suffered setbacks from the same parasitic diseases that have ravaged the mid-Atlantic, and periodically wild larval sets disappoint,

but the industry still sustains a harvest that is hundreds of times what an un-enhanced wild fishery would yield on its own.

The take-home message is that with proper management and incentives we can have a profitable oyster industry despite devastating diseases, pollution closures and habitat loss. Production from aquaculture is up sharply in the past twenty years. The profit motive has come back and there is a proliferation of small oyster farms in New England who are using a host of methods to grow oysters successfully.

Innovative oyster farmers in Rhode Island rely on hatchery-reared seed to fill their racks and cages. This is an industry that has grown 28% a year for the past five years.

Massachusetts has some 300 shellfish aquaculture leases-- most of which are less than 20 years old.

In New York oyster culture permits have tripled in the past fifteen years and the landed value of harvests has gone from \$1.2 million to \$3.4 million.

Even in Virginia where the wild populations are in decline, private growers who have leases have found that they can prosper using hatchery-reared seed and intensive culture techniques. This despite intense disease pressure and degraded water quality alluded to in the petition. The difference lies in the ownership of the crop. Where private leases have been resisted in favor of preserving the artisanal wild-harvest fishery you find that there is little incentive to invest adequately in the rejuvenation of the seed beds.

The differences in these management approaches (public fisheries versus private farms) have been noted by many experts over the years. In *The Oyster* (1891) Dr William Brooks wrote eloquently of the possibilities of oyster culture in the Chesapeake Bay and the problems of unmitigated free and common fisheries. His comments are as valid today as they were over a century ago. "Our opportunities for rearing oysters are unparalleled in any other part of the world."

Recently, numerous groups have made a concerted effort to replenish the oyster bars and some of these efforts are starting to bear fruit. However, many fear that these efforts will be doomed to failure unless the destructive harvest practices of the past are curtailed. Unfortunately, funding for these replenishment efforts was cut in the most recent federal budget. This is often the fate of publicly funded fishery restoration efforts because there is a disconnect between those footing the bill and those reaping the benefit.

We should not use the Endangered Species Act as an instrument to rectify decades of mismanaged fisheries in the mid-Atlantic. While the ESA is an important and valuable tool, the ESA is a blunt instrument and was never intended as a fisheries management tool.

The fisheries management practices of the past have failed to protect the resource. We need only look to the north to see how there is a tremendous potential to rejuvenate the

oyster resource through private commercial aquaculture. It can succeed even in areas where disease pressure is severe and water quality is degraded.

The second point in the petition I would like to refute is that declining water quality, high silt loading and nutrient loading are to blame for the oysters disappearance. The oyster is uniquely adapted like no other shellfish to thrive in conditions of soupy turbid water. The feeding apparatus is capable of sorting microscopic particles of silt from those which are nutritious alga. Oysters thrive in some of the most severely degraded estuaries on the eastern seaboard.

During my thesis work I experimented with growing oyster seed under docks in marinas. We expected problems from the heavy metals in the bottom paints and the fuel spills, however we experienced nearly 100% survival and growth rates as fast as any reported in the literature. Based on the data I supplied to the FDA showing these animals were safe to consume after a few months in clean waters, the FDA changed its regulations to allow nursery culture of shellfish seed in uncertified waters, a practice in wide use today. I now culture my entire crop of three million animals a year under the docks of a local marina.

The last point I would like to make is that adding the oyster to the endangered species list will have severe negative repercussions to the shellfish aquaculture industry, which will in turn have negative implications for both the wild oyster population and the marine environment. I understand that the ESA does not permit consideration of economic factors such as jobs or harvests, but if the listing goes forward we can be assured markets will be damaged and interstate transport of cultured oysters will become a regulatory and paperwork nightmare. Siting of new aquaculture leases in protected essential oyster habitat will be impossible.

Under this scenario my small farm, which occupies 2.3 acres and employs five year-round, will cease to be profitable. A graduate student recently documented the abundance of fish and critters that live in and around my oyster cages. He found ten times the abundance of fish and crustaceans as he found in a nearby eelgrass bed. In summer I estimate there are a thousand baby lobsters and tens of thousands of juvenile fish that make our cages their home.

My oysters filter over a hundred million gallons a day removing silt and improving water clarity. Each year my oysters cast trillions of larvae into the tides where they replenish wild stocks.

Because I invest thousand of dollars each year in new seed my harvest is sustainable and when I harvest I remove nitrogen from the watershed (in the form of protein) and ship it off to Manhattan or DC. Only about 40 pounds of nitrogen a year, but then I have only a small farm.

There are literally thousands of small growers like myself up and down the coast.

It is easy to see there will be negative impacts to the environment and to wild populations of oysters if this petition goes forward.

